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**Name of Organization:** Hammond Department of Environmental Management

**Type of Organization:** Municipality

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**Project Title:** George Lake Watershed Restoration Project 2

**Project Category:** Habitat (Ecological) Protection and Rest

**Rank by Organization (if applicable):** 0

**Total Funding Requested (\$):** 217,000 **Project Duration:** 1.5 Years

**Abstract:**

This project involves the restoration of a brownfield (100 acres), and George Lake (170 acres mol) and its industrial watershed, to a restored habitat to provide increased connectivity between the habitat corridors established in South Chicago and along the Grand Calumet River and the Indiana Dunes.

The ecology of George Lake (North and South Basins) has been altered by deposits of industrial slag in the lake waters. Natural habitat has been adversely affected as the lake depths have been reduced to less than 3 feet, the pH of the lake water has increased to over 9.0 on the southern portion of the lake, and heavy metals have been detected in the lake waters. Wildlife, aquatic and plant life, plus migratory birds have been impacted by the polluted conditions in the southern lake area, invasive species have taken residence in this area, and natural wetlands have slowly disappeared.

Plant species in the affected portion of the lake are non-native, invasive, and have taken over the lake waters. Animal and fish habitat have been adversely affected. Assessments of the plant and animal habitat show negative impacts due to current conditions in the lake. Fish have exhibited imperfections due to polluted conditions, they are susceptible to "winter kill" due to shallow depths, and plant life has "choked" out most of the lakes southern basin.

The southern basin lake bottom has been targeted for deepening to allow fish winter habitat, as well as reduce and eliminate invasive plant species. Runoff into the lake will be treated by a series of constructed wetland areas, capable of filtering runoff to allow clean inflow to the lake. This inflow will provide makeup water to the lake and facilitate natural clean up of the pH and metals content in the lake. Thirty-eight (38) acres of the 100 acre slag dump, directly on the southern shore of the south basin, have a CAP. The remaining sixty-two (62) acres of slag need a CAP to complete this project.

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**Geographic Areas Affected by the Project**

**States:**

|   |                                       |
|---|---------------------------------------|
| <input type="checkbox"/> Illinois           | <input type="checkbox"/> New York     |
| <input checked="" type="checkbox"/> Indiana | <input type="checkbox"/> Pennsylvania |
| <input type="checkbox"/> Michigan           | <input type="checkbox"/> Wisconsin    |
| <input type="checkbox"/> Minnesota          | <input type="checkbox"/> Ohio         |

**Lakes:**

|  |                                    |
|--|------------------------------------|
| <input type="checkbox"/> Superior            | <input type="checkbox"/> Erie      |
| <input type="checkbox"/> Huron               | <input type="checkbox"/> Ontario   |
| <input checked="" type="checkbox"/> Michigan | <input type="checkbox"/> All Lakes |

**Geographic Initiatives:**

|  |                                  |  |                                      |   |
|--|----------------------------------|--|--------------------------------------|---|
| <input type="checkbox"/> Greater Chicago | <input type="checkbox"/> NE Ohio | <input checked="" type="checkbox"/> NW Indiana | <input type="checkbox"/> SE Michigan | <input type="checkbox"/> Lake St. Clair |
|--|----------------------------------|--|--------------------------------------|---|

**Primary Affected Area of Concern:** Grand Calumet River/IHC, IN

**Other Affected Areas of Concern:**

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***For Habitat Projects Only:***

**Primary Affected Biodiversity Investment Area:** Chicago Wilderness

**Other Affected Biodiversity Investment Areas:**

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**Problem Statement:**

George Lake is a natural lowland area in Northwest Indiana, formed as Lake Michigan receded several thousand years ago. The natural characteristics of the lake include shallow wetland areas surrounding a shallow lake area (depths of 5 to 15 feet). The lake originally exhibited the configuration of a long narrow inundated area, with a width of 1,000 to 1,500 feet and a length of 1 to 2 miles.

Development of the area after 1900 resulted in reduction of water surface and wetland areas from the south. Large deposits of industrial slag in the southern portion of the lake (just north of 129th street) have resulted in ecological alterations in the lake and its surrounding area.

Natural habitat has been disturbed as the lake depths have been reduced to 3 feet maximum because of sedimentation, the potential hydrogen (pH) has been elevated from natural levels of 7.0 to over 9.0 in the southern reaches of the lake. Recent testing has shown high levels of heavy metals suspended in the lake waters. The 100 acre deposit of steel mill slag has been identified as the source of both the pH and metals affecting the lake.

The shallow depths in the lake have also resulted in invasive plant species now living in the shallow waters supported by increased access to sunlight. These species are non-native, and have taken over the lake habitat, affecting aquatic habitation in the lake. Fish in the waters at George Lake are susceptible to "winter kill" with the shallow waters, and tests have shown the fish to be adversely affected by current lake conditions.

**Proposed Work Outcome:**

In order to reverse the current pollution entering the lake, the project team, with the input of a Citizens Advisory Committee, has determined that surface and groundwater runoff from the slag deposits into the lake, must be managed with best management practices. The remediation alternative selected to accomplish this reduction include: placing a cap of low hydraulic conductivity over the slag, and removing sand from the lake to deepen it to natural levels (10'). Additionally, wetlands areas will be re-created around the lake, and used to filter rainwater runoff from the capped slag site into the lake.

The combination of a deeper lake, wetland filtering, a site cap, and clean make up water from storm water runoff will result in buffering the high pH levels, and eliminating the suspended metals from entering the waters. Thus, allowing existing

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metals to settle out of the water. Deepening the lake bottom will also reduce or eliminate invasive plant species found in the lake. Wildlife, aquatic and plant life, plus migratory birds will benefit by the reduction in contamination and the habitat created by the wetlands.

As part of the fish habitat restoration the project plans to reintroduce the following fish specie to the lake: bluegill, yellow perch, largemouth bass, black crappie and central mudminnow. The following native wetland species will be restored: chairmakers rush, softstem bulrush, dark green bulrush, fox sedge and switchgrass. Invasive wetland plant and aquatic species to be removed or controlled include: eurasian milfoil, purple loosestrife and common reed.

Grant Funding will be used for: Assessment (Lake Sampling, Lab Analysis, Wetlands Delineation) \$32,000; Design (Wetlands Design, Lake Bottom Grading Design) \$27,500; Installation \$85,000; Field QA/QC (QC Procedure, Field QC Verification, Runoff Sampling and Reporting-3 years) \$72,500.

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| <b>Project Milestones:</b>             | <b>Dates:</b> |
|--|---------------|
| Project Start-Design Dewatering System | 05/2000       |
| Dewater South Basin of George Lake     | 05/2000       |
| Remove Sand                            | 06/2000       |
| Design Wetlands                        | 10/2000       |
| Plant Wetlands                         | 03/2001       |
| Wetlands Grow-in                       | 04/2001       |
| Wetlands Evaluation                    | 09/2001       |
| Project End                            | 10/2001       |

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☒ Project Addresses Environmental Justice

**If So, Description of How:**

Few areas in the United States have seen the concentration of pollution found in Northwest Indiana. George Lake, and its watershed, is in the Grand Calumet River/Indiana Harbor Canal Area of Concern. Northwest Indiana has been selected for a Geographic Initiative by the United States Environmental Protection Agency - Region V. Using data collected under the federal Community Right to Know Statute (EPCRA), Lake County, Indiana, consistently ranks as one of the most polluted counties in the nation. As demonstrated by the following statistics, the project site is located in an ethnically diverse community:

Population: 84,236 White 85%, Black 10%, Asian/Pacific Islander 4%, American Indian/Eskimo 1%.

This project will greatly improve the quality of life for the minority and lower income population of the area. Once completed, the George Lake Watershed Restoration Project will provide low or no cost recreational activities and add natural resources for the entire region to utilize and enjoy. The means of access will be through the Hammond Transit System which provides public transportation in Hammond and it is directly connected to the City of Gary Public Transit System, the City of East Chicago Public Transit System, and the Northern Indiana Commuter Transportation District (commuter railroad) in Indiana. The Hammond Transit System is also directly connected to the PACE Suburban Transit System (which services south Cook County, Illinois) and the City of Chicago Transit Authority. A modification to the Hammond Transit route in the area of the Watershed Restoration Project has already been evaluated and a route change will occur in the Spring of 2000 when the first phase of the project, the Affordable Youth Golf Course and Driving Range, is scheduled to open.

☒ Project Addresses Education/Outreach

**If So, Description of How:**

Community input has played a significant role in the development of this project. Public support and interest in this project has been high and public meetings concerning this project have been well attended. To address the heightened interest in this project, the City of Hammond has formed a Citizens Advisory Committee. This committee includes citizens, representatives of environmental organizations, elected officials, and professionals who provide technical assistance to the committee members. The role of this committee is to disseminate information about the project, solicit input from the community, and assist in the design of the overall remediation and restoration work. A "Hot Line" is being established to receive questions from citizens that cannot attend meetings, but are in need of professional environmental answers.

The Hammond School City is embarking on a program that offers students citywide the opportunity to take advantage of the "Affordable" Youth Golf Course. This educational effort is expected to become a model for the region and adopted by other educational institutions. In addition to using the "Affordable" Youth Golf Course, students can visit the Hammond Environmental Education Center, which is located directly adjacent to the golf course. The Environmental Education Center provides real world exposure to the environmental areas of air and water pollution, solid and hazardous waste, and recycling. The naturally restored and enhanced areas will be a living example of how the industrial environment of Northwest Indiana can be fully reclaimed. A comprehensive public transit system makes this sharing of precious

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opportunities and resources with the entire regional population a reality.

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**Project Budget:**

|                            | <b>Federal Share Requested (\$)</b> | <b>Applicant's Share (\$)</b> |
|----------------------------|-------------------------------------|-------------------------------|
| <b>Personnel:</b>          | 0                                   | 0                             |
| <b>Fringe:</b>             | 0                                   | 0                             |
| <b>Travel:</b>             | 0                                   | 0                             |
| <b>Equipment:</b>          | 0                                   | 0                             |
| <b>Supplies:</b>           | 0                                   | 0                             |
| <b>Contracts:</b>          | 217,000                             | 3,500,000                     |
| <b>Construction:</b>       | 0                                   | 0                             |
| <b>Other:</b>              | 0                                   | 0                             |
| <b>Total Direct Costs:</b> | 217,000                             | 3,500,000                     |
| <b>Indirect Costs:</b>     | 0                                   | 0                             |
| <b>Total:</b>              | 217,000                             | 3,500,000                     |
| <b>Projected Income:</b>   | 0                                   | 0                             |

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**Funding by Other Organizations (Names, Amounts, Description of Commitments):**

The following funding mechanisms have been identified:

**Local Funds.** These include tax dollars generated through a Tax Increment Financing (TIF) district created by the City of Hammond to fund this project. The City is also pursuing a State Sales Tax Increment Financing (STIF) District. Local funds may also come from local Riverboat Gaming Revenue. (\$3,500,000.00)

**Potentially Responsible Parties.** If potentially responsible parties can be identified, efforts will be initiated to have them contribute to the site investigation, assessment, and remediation costs.

**State Funds.** These include funds that were penalties received by the Indiana Department of Environmental Management and deposited into their Environmental Management Special Fund. The amount involved ranges from \$250,000 to \$1,000,000.

**Supplemental Environmental Project Funds.** The City of Hammond has already approached USEPA and IDEM for the use of environmental penalties paid by local polluters to be used to support this project.

**Private Funds.** Private grants, including the NIPSCO Environmental Challenge Fund, have already paid for environmental restoration and clean-up projects within the project area. Private funds have been used by adjacent property owners (BP AMOCO) to conduct Phase I and Phase II environmental assessments on adjacent properties that may be donated to the project or be long-term leased to the project. The City is currently pursuing additional funds from other private sources.

**Federal Funds.** USEPA Brownfield Demonstration Pilot (\$200,000.00), not included as matching funds..

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**Description of Collaboration/Community Based Support:**

**Cooperative Partners:** The City of Hammond, Hammond Redevelopment Commission, Hammond Department of Environmental Management, Hammond Sanitary District, Hammond Park Department, School City of Hammond, United States Environmental Protection Agency Region V (Brownfield Program), State of Indiana, Indiana Department of Environmental Management (VRP Program), Lake County (Indiana), Federal Home Loan Bank and local financial institutions, Hammond Environmental Education Center, George Lake Watershed Project Citizens Advisory Committee, private citizens, Bascor Environmental, Inc., J.F. New & Associates, Howard Designs, Reith-Riley Construction, American Fabricators, BP Amoco, and Area Career Center Vocational Students.

**Formation of a Project Team.** The City of Hammond has assembled a project team which includes environmental and restoration professionals, design and planning experts, government officials, financial and legal experts, private sector partners and environmental organizations. The project team meets weekly.

Obtain Public Input. The City of Hammond has formed a Citizens Advisory Committee for this project. The committee conducts public meetings in the community to receive public input on its plans and goals and to address public concerns and issues. Public participation is considered an essential issue in developing a community oriented recreational, restoration and enhancement project. The Citizens Advisory Committee meets monthly and in response to specific community issues.